



## Summary

### Main Features

**Note:** The Labour Force Survey product set is changing in 2003.

#### FINAL ISSUE

This is the final issue of **Labour Force, Australia** (cat. no. 6203.0). Statistics included in this publication will continue to be available in the future, from a variety of sources. For subscribers to this publication, information on the various options available has been provided either on the flysheet included with this issue (for those receiving hardcopy versions) or via email (for those receiving the Acrobat pdf version). For example, subscribers may choose to switch their subscription to the new quarterly publication **Australian Labour Market Statistics** (cat. no. 6105.0), subscribe to new or existing electronic products, or receive a refund.

Further information on the new Labour Force Survey product set is detailed in the **Information Paper: Changes to Labour Force Survey Products** (cat. no. 6297.0) available free from the ABS web site (Themes - Labour). Any queries on the new product set should be directed to Lorraine Cornehlis (email: [lorraine.cornehls@abs.gov.au](mailto:lorraine.cornehls@abs.gov.au); telephone: 02 6252 6079).

#### NOTES ON ESTIMATES

A new sample for the Labour Force Survey is being introduced progressively over the period November 2002 to June 2003. See paragraphs 13 to 15 of the Explanatory Notes or **Information Paper: Labour Force Survey Sample Design** (cat. no. 6269.0) for details.

Following the regular annual seasonal reanalysis, the total published growth in employment, seasonally adjusted, over the four months from November 2002 to February 2003 (coinciding with the introduction of a little more than half the new sample), is 193,700.

To assist in the interpretation of the published estimates, the ABS is investigating the labour force characteristics of the new sample in comparison with the sample that it is replacing. Analyses to date have used alternative methods that place greater emphasis on the sample that is common between consecutive months of the survey.

The matched rotation group method calculates monthly movements using the 7/8th of the sampled dwellings that are common between consecutive months under the LFS rotation scheme. This method produces an increase in employment (seasonally adjusted) over the last four months of about 30,000 less than the published estimate. However, some caution should be used in interpreting matched rotation group estimates, as they have a tendency to underestimate employment growth. If an adjustment were made for this effect, the estimated change in employment from the matched rotation group estimate would be closer to the published figure.

Composite estimation, a technique which does not exhibit this effect, produces an estimate of employment growth over the last four months that is broadly similar to the currently published figure. For information about matched rotation group and composite estimates, see the article in the May 1998 issue of **Australian Economic Indicators** (cat. no. 1350.0).

While additional sampling error is expected during implementation of the new sample, there is no evidence from these analyses that the change in sample has materially affected estimates of employment growth. Further analyses are being undertaken, and the ABS will publish the results when they are completed.

#### STATE INQUIRIES

For further inquiries about labour force data, contact Labour Force Inquiries in ABS State offices: Sydney 02 9268 4633, Melbourne 03 9615 7073, Brisbane 07 3222 6068, Adelaide 08 8237 7365, Perth 08 9360 5304, Hobart 03 6220 5876, Darwin 08 8943 2120, Canberra 02 6207 0283.

For further information about these and related statistics, contact Marjory Smith on Canberra 02 6252 6525, or the National Information Service on 1300 135 070.

## **SEASONAL REANALYSIS OF MONTHLY LABOUR FORCE SURVEY ESTIMATES**

### **INTRODUCTION**

Each year, all seasonally adjusted and trend Labour Force Survey (LFS) estimates are reanalysed and revised back to February 1978 after the application of updated seasonal factors. Revisions resulting from the 2003 reanalysis were released electronically on 6 March 2003. This article explains the annual seasonal reanalysis process and the methodology for seasonal and trend series adjustment applied to LFS estimates.

The impact of the revisions is illustrated in the table at the end of this article, where the revised estimates are compared with previously published estimates for selected seasonally adjusted series.

### **SEASONAL REANALYSIS**

Seasonal adjustment is a means of removing the estimated effects of regular seasonal variations from a time series of data, so that the effects of other influences on the series can be recognised more clearly. The seasonally adjusted estimates also reflect the sampling and non-sampling errors present in the original data.

As with most ABS seasonally adjusted series, LFS seasonal factors are reviewed annually. This process assesses possible changes in seasonality, taking into account the most recent year's data, in order to derive the seasonal adjustment factors for the coming year and any revisions to seasonal factors for previous years.

#### **Seasonally adjusted series**

For Australia, seasonally adjusted estimates for employed persons are obtained by adding the following independently adjusted series for males and females:

- aged 15 to 19 employed full time;
- aged 20 and over employed full time; and
- employed part time.

Original estimates of married females employed full time and employed part time are also independently seasonally adjusted, but are not used in the calculation of total female seasonally adjusted employment.

Seasonally adjusted estimates for unemployed persons are obtained by adding the following independently adjusted series for males and females:

- aged 15 to 19 looking for full-time work;
- aged 20 and over looking for full-time work; and
- looking for part-time work.

Original data for males and females aged 15 to 19 looking for first full-time job are also seasonally adjusted, but are not used in the calculation of the aggregate estimates. The series for married females looking for full-time and part-time work are also independently adjusted, but are not used in the calculation of total female seasonally adjusted unemployment.

Seasonally adjusted estimates for the labour force are formed by adding the seasonally adjusted component series for the employed and unemployed. Seasonally adjusted unemployment rates are calculated using seasonally adjusted unemployment and labour force estimates. Seasonally adjusted participation rates are calculated using seasonally adjusted labour force and unadjusted population estimates. Seasonally adjusted unemployment to population ratios are calculated using seasonally adjusted unemployment and unadjusted population estimates.

For the states and territories, seasonally adjusted estimates of employment and unemployment are obtained by the addition of the independently adjusted series for males and females. Estimates of males and females employed full time are also adjusted, but are not used to generate total employment estimates.

Given that estimates for Australia, States and Territories are adjusted independently, the addition of seasonally adjusted estimates across all States and Territories will not generally equal the seasonally adjusted Australian total. Seasonally adjusted estimates for the Northern Territory and the Australian Capital Territory are not published due to the high level of revision to these estimates after each seasonal reanalysis. See paragraph 40 of the Explanatory Notes for further information.

Seasonally adjusted estimates of long-term unemployment are obtained by independently adjusting the original series for males and females unemployed for 52 weeks and under 104 weeks; and the series for males and females unemployed for 104 weeks and over. Total long-term unemployment estimates are the aggregation of these component series.

The employed persons series for each ANZSIC Industry Division is independently seasonally adjusted. For this reason, the sum of seasonally adjusted employment estimates for Industry Divisions will not generally equal the seasonally adjusted estimate of total employment. For further information on the seasonal adjustment process, contact the Assistant Director, Time Series Analysis on 02 6252 6345.

## **Future developments**

Evolving seasonal patterns cause revisions to seasonal factors. If reanalyses were conducted more frequently than annual, the seasonal factors would stabilise sooner. The option of conducting seasonal reanalyses each month (for a monthly series) or each quarter (for a quarterly series) is called concurrent reanalysis. After discussion with users over the past year, concurrent reanalysis will be implemented into Labour Force Survey statistics within the next year.

## **Trend series**

Smoothing the seasonally adjusted series produces a 'trend' series by reducing the impact of the irregular movements in the series. A trend series is useful for analysing the underlying behaviour of the series over time.

For monthly series, a 13-term Henderson-weighted moving average is applied to the seasonally adjusted series, for all months except the last six. The last six monthly trend estimates are obtained by applying surrogates of the Henderson average to the seasonally adjusted series, and are revised as later data become available. For quarterly series, a 7-term Henderson moving average is applied to the seasonally adjusted series, with surrogate weights for the current end of the time series. See paragraphs 38 and 39 of the Explanatory Notes for further information.

For the purpose of deriving trend estimates only, seasonally adjusted observations are modified prior to the application of the Henderson weights, in instances where there have been unusually large identified outliers.

Using the Henderson weights, trend series are produced corresponding to each of the component seasonally adjusted series identified above. Like their seasonally adjusted counterparts, aggregate level trend data are the addition of these component series. Trend unemployment rates are calculated by dividing trend unemployment by trend labour force estimates. Trend participation rates and unemployment to population ratios are derived by applying Henderson weights to the respective seasonally adjusted rate and ratio series.

## **RELEASE OF REVISED DATA**

Revised seasonally adjusted and trend labour force data were released electronically on 6 March and were subsequently included in the February 2003 issue of **Labour Force, Australia, Preliminary** (cat. no. 6202.0) released on 13 March 2003. Revised estimates from February 1978 to January 2003 are available on AusStats, floppy disk or as a special data service. Revised seasonal adjustment factors from February 1978 to January 2004 are available on floppy disk or as a special data service.

## **Other series**

For the LFS, only major National and State/Territory series are subject to seasonal and trend adjustment. Other LFS series can be adjusted on a consultancy basis by contacting the person listed below.

## **FURTHER INFORMATION**

For further information about revised labour force estimates, contact Peter Bradbury on 02 6252 6525 or email [peter.bradbury@abs.gov.au](mailto:peter.bradbury@abs.gov.au).

---

**TABLE 1. LABOUR FORCE SURVEY SEASONAL REANALYSIS, FEBRUARY 2003: DIFFERENCE BETWEEN PREVIOUSLY PUBLISHED AND REVISED SEASONALLY ADJUSTED ESTIMATES OF EMPLOYED PERSONS, UNEMPLOYED PERSONS, UNEMPLOYMENT RATE AND PARTICIPATION RATE**

	Employed Persons ('000) Previously			Unemployed Persons ('000) Previously		
	Published	Revised	Difference (a)	Published	Revised	Difference (a)
<b>2001</b>						
January	9,115.5	9,109.8	-5.8	615.7	615.6	-0.1
February	9,117.7	9,113.8	-3.9	647.5	647.3	-0.2
March	9,127.4	9,113.8	-13.7	633.5	640.4	6.9
April	9,159.1	9,165.3	6.2	660.5	663.4	2.9
May	9,155.9	9,151.6	-4.3	668.3	665.5	-2.8
June	9,147.3	9,151.5	4.2	675.8	674.8	-1.0
July	9,133.4	9,138.3	4.8	673.8	678.7	4.9
August	9,194.1	9,187.7	-6.4	671.3	670.4	-0.8
September	9,158.6	9,161.8	3.3	662.6	664.0	1.4
October	9,179.4	9,184.6	5.2	693.6	691.9	-1.7
November	9,191.8	9,198.8	7.1	670.9	668.1	-2.8
December	9,199.0	9,203.3	4.3	665.3	656.6	-8.7
<b>2002</b>						
January	9,262.7	9,253.7	-9.0	692.5	692.6	0.1
February	9,283.1	9,277.7	-5.4	652.5	651.8	-0.8
March	9,304.3	9,289.3	-15.0	622.3	630.2	7.9
April	9,260.8	9,267.6	6.8	621.6	624.0	2.4
May	9,305.2	9,300.8	-4.4	622.5	619.1	-3.4
June	9,317.8	9,323.1	5.3	643.9	642.8	-1.1
July	9,289.5	9,293.9	4.4	609.4	614.1	4.7
August	9,378.0	9,370.9	-7.0	622.7	620.2	-2.6
September	9,347.3	9,350.8	3.5	617.1	619.6	2.4
October	9,363.1	9,369.8	6.7	598.6	596.9	-1.8
November	9,423.6	9,429.8	6.2	616.8	614.1	-2.7
December	9,475.6	9,481.8	6.2	628.4	619.2	-9.2
<b>2003</b>						
January	9,586.6	9,575.8	-10.8	619.9	619.7	-0.2
	Unemployment Rate (%) Previously			Participation Rate (%) Previously		
	Published	Revised	Difference (a)	Published	Revised	Difference (a)
<b>2001</b>						
January	6.3	6.3	0.0	63.5	63.5	0.0
February	6.6	6.6	0.0	63.7	63.6	0.0
March	6.5	6.6	0.1	63.6	63.5	0.0
April	6.7	6.7	0.0	63.9	63.9	0.1
May	6.8	6.8	0.0	63.8	63.8	0.0
June	6.9	6.9	0.0	63.8	63.8	0.0
July	6.9	6.9	0.0	63.6	63.6	0.1
August	6.8	6.8	0.0	63.9	63.8	0.0
September	6.7	6.8	0.0	63.5	63.6	0.0
October	7.0	7.0	0.0	63.8	63.8	0.0
November	6.8	6.8	0.0	63.6	63.7	0.0
December	6.7	6.7	-0.1	63.6	63.5	0.0
<b>2002</b>						
January	7.0	7.0	0.0	64.1	64.0	-0.1
February	6.6	6.6	0.0	63.9	63.9	0.0
March	6.3	6.4	0.1	63.8	63.7	0.0
April	6.3	6.3	0.0	63.4	63.5	0.1
May	6.3	6.2	0.0	63.6	63.6	-0.1
June	6.5	6.5	0.0	63.7	63.8	0.0
July	6.2	6.2	0.0	63.3	63.3	0.1
August	6.2	6.2	0.0	63.8	63.8	-0.1
September	6.2	6.2	0.0	63.5	63.6	0.0
October	6.0	6.0	0.0	63.4	63.5	0.0
November	6.1	6.1	0.0	63.8	63.9	0.0
December	6.2	6.1	-0.1	64.2	64.1	0.0
<b>2003</b>						
January	6.1	6.1	0.0	64.7	64.7	-0.1

(a) Calculated on unrounded estimates

## LABOUR MARKET IN BRIEF

### TREND ESTIMATES

The trend estimate of employed persons has been increasing since December 2000, reaching 9,559,600 in February 2003. Full-time employment rose to 6,834,400 and part-time employment rose to 2,725,200. The trend estimate of unemployment rose slightly to stand at 614,400 in February 2003. The trend unemployment rate in

February 2003 fell marginally to 6.0%. The male and female unemployment rates remained at 6.2% and 5.9% respectively. The trend participation rate in February 2003 rose to 64.5%. The female participation rate rose to 56.8% and the male participation rate rose to 72.4%.

## EMPLOYMENT

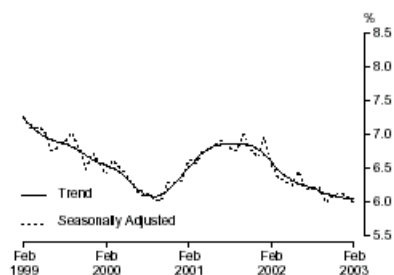
The seasonally adjusted estimate of employment decreased by 12,300 to 9,563,500 in February 2003. Full-time employment increased by 10,000 to 6,852,100, with female full-time employment increasing by 13,300 to 2,332,200 and male full-time employment decreasing by 3,300 to 4,519,900. Part-time employment decreased by 22,300 to 2,711,400. Female part-time employment decreased by 15,500 to 1,945,900, and male part-time employment decreased by 6,700 to 765,500.

## UNEMPLOYMENT

The seasonally adjusted estimate of unemployment decreased by 10,000 to 609,700 in February 2003. The number of unemployed persons seeking full-time work decreased by 8,600 to 458,200, and the number of unemployed persons seeking part-time work decreased by 1,400 to 151,600.

## UNEMPLOYMENT RATE

The seasonally adjusted unemployment rate decreased by 0.1 percentage point to 6.0% in February 2003. The male and female rates both decreased by 0.1 percentage point to 6.1% and 5.8% respectively.



## PARTICIPATION RATE

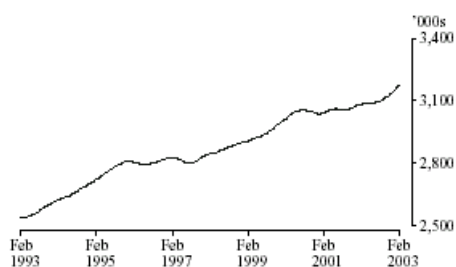
The seasonally adjusted labour force participation rate decreased by 0.2 percentage points to 64.4% in February 2003. The male participation rate decreased by 0.3 percentage points to 72.3%, and the female participation rate decreased by 0.1 percentage point to 56.8%.

## PRINCIPAL LABOUR FORCE SERIES

### PERSONS EMPLOYED BY STATE: TREND SERIES

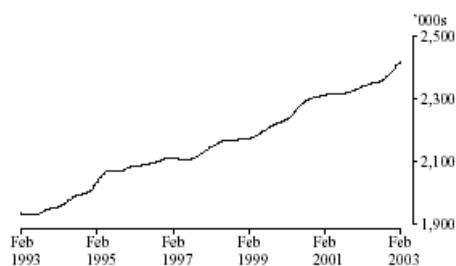
#### New South Wales

From a low of 2,542,700 in February 1993, the trend estimate of employment in New South Wales generally rose to 3,056,600 in August 2000. While the trend fell slightly to 3,038,400 in January 2001, it has since risen to stand at 3,174,800 in February 2003.



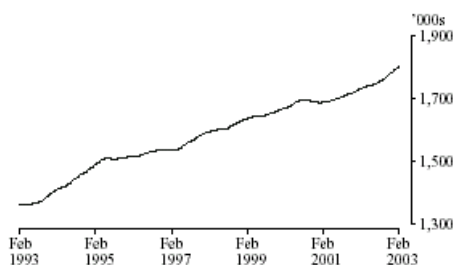
#### Victoria

The trend estimate of employment in Victoria rose strongly from a low of 1,927,900 in May 1993, to 2,069,300 in June 1995. Growth then slowed until mid 1997. Since then the trend has risen steadily to stand at 2,418,200 in February 2003.



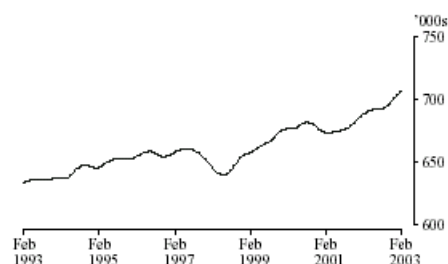
## Queensland

The trend estimate of employment in Queensland has generally been rising since February 1993, when it stood at 1,361,400. The strongest growth over this period was recorded between mid 1993 and mid 1995. Following a small decrease in late 2000, the trend has been steadily increasing and stood at 1,805,000 in February 2003.



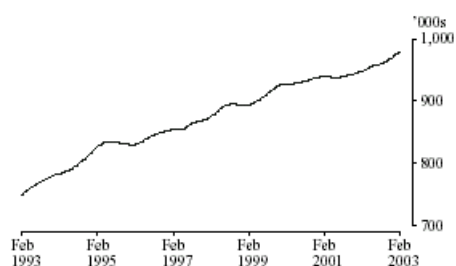
## South Australia

The trend estimate of employment in South Australia, although fluctuating, generally rose from a low of 633,500 in February 1993 to 682,000 in August 2000. After a small decrease in late 2000, the trend estimate has risen to stand at 707,100 in February 2003.



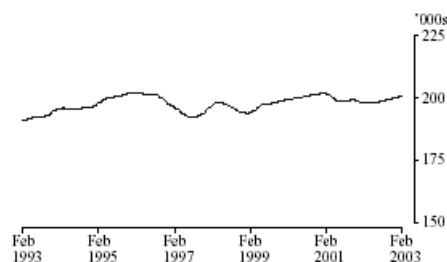
## Western Australia

The trend estimate of employment in Western Australia has generally been rising since February 1993, when it stood at 750,300. The strongest period of growth occurred prior to mid 1995. Since then the trend estimate has increased at a slower rate, and stood at 978,200 in February 2003.



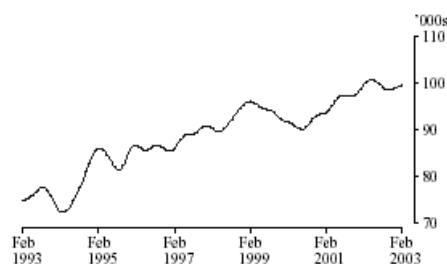
## Tasmania

From a high of 202,200 in January 1996, the trend estimate of employment in Tasmania fell sharply to 192,200 in August 1997. The trend then generally rose to 201,700 in January 2001, before falling to 197,800 in March 2002. Since then the trend has risen to stand at 200,500 in February 2003.



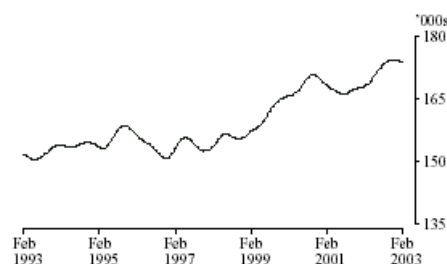
## Northern Territory

The trend estimate of employment in the Northern Territory, although fluctuating, increased from a low of 72,300 in March 1994 to 96,100 in February 1999. The trend then fell to 90,100 in June 2000, before generally rising to stand at 99,600 in February 2003.



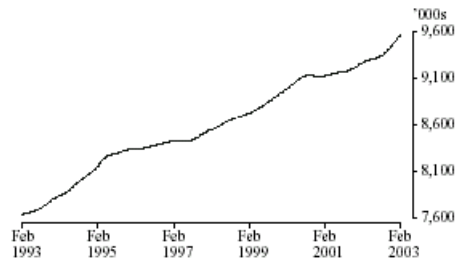
## Australian Capital Territory

The trend estimate of employment for the Australian Capital Territory increased from a low of 150,600 in June 1993 to 158,700 in October 1995, before falling to 150,800 in November 1996. The trend estimate then increased to 171,000 in October 2000, before falling to 166,300 in July 2001. Since then the trend has generally increased to stand at 173,900 in February 2003.



## Australia

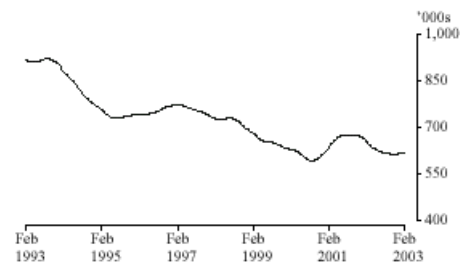
The trend estimate of employed persons generally rose from a low of 7,634,000 in January 1993 to 9,129,300 in September 2000. The trend then fell to 9,112,900 in December 2000, before rising to stand at 9,559,600 in February 2003.



## PRINCIPAL LABOUR FORCE SERIES: TREND SERIES

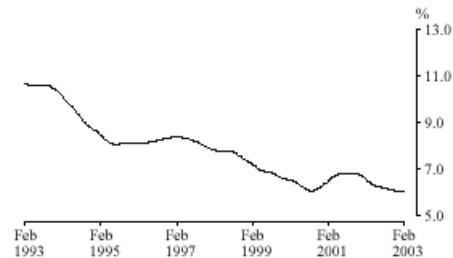
### Unemployment

The trend estimate of unemployed persons peaked at 920,600 in September 1993, before falling rapidly to 728,100 in July 1995. The trend then rose slowly reaching 771,800 in February 1997, before falling to 590,900 in September 2000. The trend then rose to 675,900 in October 2001, before falling to stand at 614,400 in February 2003.



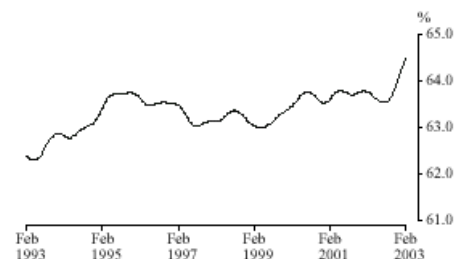
### Unemployment Rate

The trend unemployment rate fell rapidly from 10.7% in August 1993 to 8.1% in July 1995. The trend then rose slowly until February 1997, before falling to 6.1% in September 2000. The trend rate then rose to 6.9% in September 2001, before falling to 6.0% in February 2003.



### Participation Rate

The trend estimate of the participation rate rose from 62.3% in April 1993 to 63.7% in November 1995. Apart from a small increase in mid 1998, the trend then generally fell to 63.0% in April 1999. The trend then increased to 63.8% in July 2000, and remained relatively steady for two years. The trend has since risen to stand at 64.5% in February 2003.





# About this Release

## ABOUT THIS RELEASE

Presents detailed results of the monthly Labour Force Survey including tables showing the civilian population aged 15 and over by sex, labour force status, age (single years for persons aged 15-24 years), marital status, States and Territories, capital cities, attendance at school or tertiary education institution, country of birth, year of arrival in Australia, industry, occupation, hours worked, average hours worked, full-time/part-time workers, participation rates, whether looking for full-time or part-time work (unemployed), duration of unemployment, changes in labour force status using matched records, relationship in household, families. Most issues contain an article on a special labour force topic.

---

# Explanatory Notes

## Explanatory Notes

### INTRODUCTION

**1** This publication contains estimates of the civilian labour force derived from the Labour Force Survey component of the Monthly Population Survey. Estimates of the labour force characteristics of family members and of family composition are also included.

**2** Estimates of the civilian labour force are available for over 77 regions across Australia and are shown in various publications produced by State offices of the ABS. These data are also available as a special data service. For details, contact any ABS office.

**3** Preliminary survey results are published in advance of this more detailed publication in **Labour Force, Australia, Preliminary** (cat. no. 6202.0).

**4** Although emphasis in the population survey is placed on the regular collection of specific data on demographic and labour force characteristics of the population, supplementary and special surveys of particular aspects of the labour force or of other subjects are carried out from time to time. Statistics from these surveys are available on request. A list of survey publications on labour force and related topics appears at the end of this publication.

### CONCEPTS, SOURCES AND METHODS

**5** The conceptual framework used in Australia's Labour Force Survey aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling the estimates, are presented in **Labour Statistics: Concepts, Sources and Methods** (cat. no. 6102.0) which is also available on the ABS web site (About Statistics-Concepts and Classifications).

### MONTHLY POPULATION SURVEY

**6** The population survey is based on a multi-stage area sample of private dwellings (currently about 30,000 houses, flats, etc.) and a list sample of non-private dwellings (hotels, motels, etc.), and covers about 0.45% of the population of Australia. The information is obtained from the occupants of selected dwellings by specially trained interviewers. The information obtained relates to the week before the interview (i.e the reference week).

**7** Households selected for the Labour Force Survey are interviewed each month for 8 months, with one eighth of the sample being replaced each month. The first interview is conducted face-to-face. Subsequent interviews are conducted by telephone (if acceptable to the respondent).

**8** The interviews are generally conducted during the two weeks beginning on the Monday between the 6th and 12th of each month. Each year, to deal with operational difficulties involved with collecting and processing the Labour Force Survey around the Christmas and New Year holiday period, interviews for December start four weeks after November interviews start, and January interviews start five weeks after December interviews start. As a result, January interviewing may commence as early as the 8th or as late as the 14th, depending on the year. In addition,

circumstances that present significant operational difficulties for survey collection can result in a change to the normal pattern for the start of interviewing.

**9** Estimates from the Labour Force Survey are published first in **Labour Force, Australia, Preliminary** (cat. no. 6202.0) 31 days after the commencement of interviews for that month, with the exception of estimates for each December which are published 38 days after the commencement of interviews.

## SCOPE

**10** The Labour Force Survey includes all persons aged 15 years and over except:

- members of the permanent defence forces;
- certain diplomatic personnel of overseas governments customarily excluded from census and estimated population counts;
- overseas residents in Australia; and
- members of non-Australian defence forces (and their dependants) stationed in Australia.

From July 1993 Jervis Bay Territory has been excluded from the scope of the survey. Before July 1993 it was included in estimates for the Australian Capital Territory.

## COVERAGE

**11** In the Labour Force Survey, coverage rules are applied which aim to ensure that each person is associated with only one dwelling, and hence has only one chance of selection. The chance of a person being enumerated at two separate dwellings in the one survey is considered to be negligible. See paragraph 51 for information about the effect of the coverage rules on family statistics.

**12** Persons who are away from their usual residence for six weeks or less at the time of interview are enumerated at their usual residence (relevant information may be obtained from other usual residents present at the time of the survey).

## POPULATION BENCHMARKS

**13** Labour Force Survey estimates of persons employed, unemployed and not in the labour force are calculated in such a way as to add up to the independently estimated distribution of the usually resident population aged 15 and over by age and sex. This procedure compensates for under-enumeration in the survey, and leads to more reliable estimates. Persons who, at the time of interview, are overseas for more than six weeks but for less than 12 months are included in the independent population statistics (benchmarks) and are thus provided for in the calculation of the estimates. The benchmarks are the latest available estimates at the time the Labour Force Survey is conducted, but they usually differ from the official population estimates subsequently published in **Australian Demographic Statistics** (cat. no. 3101.0) because they are derived from incomplete information about population changes.

## REVISION OF POPULATION BENCHMARKS

**14** Survey estimates are not revised for the usually small amendments of population benchmarks arising from new data on deaths and overseas and internal migration. Revisions are made, however, after each Census of Population and Housing, and when population estimation bases are reviewed. These revisions affect original, seasonally adjusted and trend estimates. The last such revision was made in February 1999 to take account of the results of the 1996 Census of Population and Housing. This revision affected all the monthly estimates from January 1995 to January 1999. The next revision, based on the 2001 Census, will be made in February 2004.

**15** Population benchmarks used in the estimation of Labour Force Survey data are compiled according to place of usual residence. An explanation of the place of usual residence conceptual basis for population estimates is given in **Demographic Estimates and Projections: Concepts, Sources and Methods** (cat. no. 3228.0) which is available on the ABS web site (About Statistics-Concepts and Classifications).

## HISTORY OF THE SURVEY

**16** National surveys were conducted in February, May, August and November each year from 1964 to February 1978. The survey has been conducted on a monthly basis since February 1978.

## QUESTIONNAIRE CHANGES

**17** The questionnaire used in the survey for the collection of labour force data has been revised from time to time. Details of these changes have been published in **Information Paper: Questionnaires Used in the Labour Force Survey** (cat. no. 6232.0) in March 1978, December 1981, August 1984, June 1986, June 1991, March 1993 and May 2001.

**18** From April 2001, the Labour Force Survey has been conducted using a redesigned questionnaire containing additional data items and some minor definitional changes. Core labour force series have been revised for the period April 1986 to March 2001 to ensure continuity. For further details, see **Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire** (cat. no. 6295.0).

## TREATMENT OF FUTURE STARTERS

**19** Future starters are those persons who were not employed during the reference week, and were waiting to start a new job within four weeks from the end of the reference week, and could have started in the reference week if the job had been available then.

**20** The current Labour Force Survey definition of unemployed only includes the subset of future starters who had actively looked for work in the four weeks to the end of the reference week (see Glossary). However, International Labour Organisation guidelines do not require future starters to be actively looking for work in order to be classified as unemployed. Hence, the current Labour Force Survey treatment of future starters is not fully consistent with the International Labour Organisation standards because the precondition of active job search is not waived, with the result that some future starters are defined as not in the labour force.

**21** ABS considers that the Labour Force Survey definition of unemployed should be aligned with International Labour Organisation recommendations for the treatment of future starters (that is, all future starters should be classified as unemployed). The redesigned questionnaire introduced in April 2001 provides for the more complete identification of future starters to support this definitional change. However, due to concerns that such a change could possibly result in a break in the core labour force series, ABS decided to postpone implementation of this change until early 2004, when historical series will be revised to align with new benchmarks from the 2001 Population Census. This delay provides the time necessary to monitor the likely impact on core series of the changed treatment of future starters, using data from the redesigned questionnaire from April 2001 onwards. Analysis of data from the February 2003 Labour Force Survey shows that an estimated 19,300 future starters were not actively looking for work, and hence were classified as not in the labour force.

## INCLUSION OF CONTRIBUTING FAMILY WORKERS

**22** In April 1986, the questionnaire was revised following the extension of the definition of employed persons to include persons who worked without pay between 1-14 hours per week in a family business or on a farm (i.e. contributing family workers). This definition aligned the Australian labour force concepts with the set of definitions adopted by the 13th International Conference of Labour Statisticians in October 1982.

**23** Previously, contributing family workers who worked 1-14 hours, or who had such a job but were not at work, were defined as either unemployed or not in the labour force, depending on whether they were actively looking for work. In order to assist users to assess the impact of the change, estimates for March 1986 based on the new definition were shown in footnotes to tables 1 and 2 of the February, March and April 1987 issues of this publication.

## COMPARABILITY OF SERIES

**24** As a result of changes in coding methods, estimates classified by industry, occupation and status in employment data from February 2000 onwards are not strictly comparable with earlier periods. For details on the changes to industry and occupation refer to the article in the November 1999 issue of this publication. For details of the change to status in employment see the article in the May 2000 issue of this publication.

**25** The ABS introduced telephone interviewing into the Labour Force Survey in August 1996. Implementation was phased in for each new sample group from August 1996 to February 1997. During this period of implementation, the new method produced different estimates than would have been obtained under the old methodology. The effect dissipated over the final months of implementation and was no longer discernible from February 1997. The estimates for February 1997 and onwards are directly comparable to estimates for periods prior to August 1996. For further details, see the feature article in the June 1997 issue of **Labour Force, Australia** (cat. no. 6203.0).

**26** From December 1989 onwards, the category **Other families** was split into **One-parent families** and **Other**

**families.** In March 1994, **Relationship in household** and **Family type** classifications were introduced to align with ABS standards. From April 2001, same sex couples are included in couple families; previously these persons were included in **One-parent families** or as a **Non-family member**.

**27** Estimates of the number of families in this publication are not strictly comparable with those in publications prior to the April 1986 issue. This is due to the adoption of a weighting procedure where the weight for a family is determined using an average of the weights for all family members responding to the Labour Force Survey. Previously, the weight used to derive estimates of the number of families was determined by nomination of a proxy 'head of household' as representative of the family. Additional tables were included in the April 1986 issue of this publication to show the impact of this new procedure.

## SURVEY SAMPLE REDESIGN

**28** Following each Population Census, the ABS reselects the Labour Force Survey sample to take into account the new information which is obtained from the Census. The sample that was used in the Labour Force Survey from September 1997 to October 2002 is being gradually replaced by a new sample selected using information collected in the 2001 Census. The new sample will be phased in over the period November 2002 to June 2003. For additional information, see **Information Paper: Labour Force Survey Sample Design** (cat. no. 6269.0).

**29** The sampling fractions for each state/territory differ in order to yield reliable estimates of the main labour force aggregates for each state and territory. The sampling fractions for the new sample together with the sampling fractions determined from the 1996 Census are:

	1996 Census redesign	2001 Census redesign
New South Wales	1 in 300	1 in 317
Victoria	1 in 257	1 in 272
Queensland	1 in 222	1 in 234
South Australia	1 in 147	1 in 149
Western Australia	1 in 160	1 in 169
Tasmania	1 in 83	1 in 89
Northern Territory	1 in 85	1 in 95
Australian Capital Territory	1 in 85	1 in 84

## RELIABILITY OF THE ESTIMATES

**30** Estimates in this publication are subject to two sources of error:

- sampling error: since the estimates are based on information obtained from occupants of a sample of dwellings they, and the movements derived from them, may differ from the figures that would have been produced if all dwellings had been included in the survey. More information on this topic is given in the Technical Notes; and
- non-sampling error: inaccuracies may occur because of imperfections in reporting by respondents and interviewers and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and efficient operating procedures.

## DIFFERENCES BETWEEN LABOUR FORCE SURVEY ESTIMATES AND OTHER ESTIMATES

**31** The results of the 2001 Census of Population and Housing show that labour force estimates derived from the Census differ from those derived from the Labour Force Survey.

**32** The broad concepts underlying the measures of the labour force and its components, employment and unemployment, are similar in the Census and the survey.

**33** There are considerable differences in both the collection methodology adopted (including the detailed questions asked) and estimation procedures. Factors contributing to differences in estimates include under-enumeration in the Population Census for which census labour force estimates have not been adjusted, the use in the Labour Force Survey of population benchmarks derived from incomplete information about population change (see paragraph 13), the inclusion of permanent defence forces in census estimates, the personal interview approach adopted in the

survey as opposed to self-enumeration of census schedules, differing questions used to determine labour force characteristics, and differing methods of adjustment for non-response to the survey or Census.

**34** The Labour Force Survey provides detailed and up-to-date estimates of employment and unemployment for Australia, states and regions, whereas the Census of Population and Housing provides counts for small areas but in less detail than is available from the survey.

**35** These considerations should be borne in mind when comparisons are made between Population Census and Labour Force Survey estimates.

## SEASONAL ADJUSTMENT

**36** Seasonally adjusted series are published in tables 2, 8, 24 and 39. Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences on the series can be recognised more clearly. Seasonal adjustment does not remove the irregular or non-seasonal influences which may be present in any particular month. This means that month-to-month movements of the seasonally adjusted estimates may not be reliable indicators of trend behaviour. For example, irregular factors unrelated to the trend account for more than half the seasonally adjusted movement in series at the Australia level, with the following frequency:

Series	Monthly movements
Employment	6 in 10
Unemployment	8 in 10
Unemployment rate	7 in 10
Participation rate	9 in 10

**37** Seasonal factors are reviewed annually to take account of each additional year's original data. The results of the latest annual review were used to compile the seasonally adjusted and trend estimates given in this publication. Accordingly, estimates for periods up to and including January 2003 have been revised. Information about the most recent annual review of seasonal factors is published in a feature article in this publication.

## TREND ESTIMATION

**38** Smoothing seasonally adjusted series produces a measure of trend by reducing the impact of the irregular component of the series. The monthly trend estimates are derived by applying a 13-term Henderson-weighted moving average to all months except the last six. The last six monthly trend estimates are obtained by applying surrogates of the Henderson average to the seasonally adjusted series. Quarterly trend estimates (e.g. employment by industry) are derived by applying a 7-term Henderson moving average to the seasonally adjusted series. The 7-term Henderson average also uses surrogate forms of the average as the end of a time series is approached. Unlike the surrogate weights of the 13-term Henderson used on monthly data, the weights employed here are tailored to suit the particular characteristics of individual series. These trend series are used to analyse the underlying behaviour of the series over time. Trend series graphs are shown on pages 9 to 12 with the trend series published in tables 3, 9, 24 and 40. Long term data are available on the ABS on-line data dissemination service, AusStats.

**39** While this smoothing technique enables estimates to be produced which include the latest month, it does result in revisions to the most recent months as additional observations become available. Generally, subsequent revisions become smaller, and after three months or two quarters have a negligible impact on the series. There will also be revisions as a result of the annual review of seasonal factors mentioned above in paragraph 37.

**40** Trend estimates for the Australian Capital Territory and the Northern Territory are published in table 9. Original estimates for the two territories have shown, historically, a high degree of variability, which can lead to considerable revisions to the seasonally adjusted estimates after each annual seasonal factor re-analysis. Seasonally adjusted estimates are not currently published for the two territories. The most recent six months trend estimates are subject to revision. For the three most recent months, the revision may be relatively large. Inferences about trends drawn from smoothed seasonally adjusted (trend) estimates for months earlier than the latest three months are unlikely to be affected by month-to-month revisions. They may, however, be revised as a result of the annual re-analysis of seasonal factors.

**41** Users may wish to refer to the ABS publication **A Guide to Interpreting Time Series - Monitoring 'Trends' an Overview** (cat. no. 1348.0) for further information about trend estimates. Details of the trend weighting patterns are available on request from the Assistant Director, Time Series Analysis on Canberra 02 6252 6345.

## MONTH-TO-MONTH MOVEMENTS

**42** Care should be taken in the interpretation of month-to-month movements in these estimates. Survey estimates are subject to sampling and non-sampling variability as explained in paragraph 30.

## GROSS FLOWS

**43** In order to minimise respondent load and at the same time maintain continuity within the population survey sample, one-eighth of the dwellings are replaced after each survey. Adoption of this rotation procedure, whereby about seven-eighths of the sample remains unchanged from one month to the next, enables more reliable measurements of changes in the labour force characteristics of the population to be made than would be possible if a new sample were introduced each month.

**44** Because a high proportion of private dwellings selected in one survey remains in the sample for the following survey, it is possible to match the characteristics of most of the persons in those dwellings from one month to the next, to record any changes that occur, and hence to produce estimates of flows between the different categories of the population and labour force.

**45** The procedures used to select persons in non-private dwellings preclude the possibility of matching any of them who may be included in successive surveys. The mobility of the population and non-response in either or both surveys means that about 10% of persons in private dwellings which are included in the sample in successive months cannot be matched. The introduction of the new sample means less persons will be common between October, November and December 2002. Normally those who can be matched represent about 80% of all persons in the survey.

**46** Changes in the characteristics of this latter group are shown in the gross flows table (table 28). About two-thirds of the remaining (unmatched) 20% of persons in the survey are likely to have characteristics similar to those in the matched group, but the characteristics of the other third are likely to be somewhat different.

**47** Gross flow estimates relate only to those persons in private dwellings for whom information was obtained in successive surveys. The expansion factors used in calculating the estimates were those applying to the second of each pair of months. Note that the estimates have not been adjusted to account for the unmatched sample component.

**48** Although it is not possible to provide gross flow estimates for all persons in the survey it is considered that the estimates derived from matched records will be a useful guide to the proportions of the movements between categories which underlie the changes in monthly levels. When comparing flows for different periods it is important to take into account the population represented by the matched sample, as shown in the last line of the table.

**49** While every effort is made to reduce non-sampling errors to a minimum, any such errors affecting labour force status will tend to accumulate in the gross flow statistics rather than to cancel out. The estimates are also subject to sampling variability, as explained in the Technical Notes. For these reasons the estimates of flows should be used with caution. The standard errors may be obtained from table A of the Technical Notes.

## LABOUR FORCE STATUS AND OTHER CHARACTERISTICS OF FAMILIES

**50** As a part of survey procedures, family relationships are determined each month, enabling both the estimation of persons cross-classified by their relationship in the household and the estimation of families. This publication contains tables showing the labour force status and family status of individuals and families classified by family type, number of family members, the labour force status of persons within families, the number of children under 15 present, and the number of dependants present.

**51** Because of the survey coverage rules, persons who usually live with other members of their family may, at the time of the survey, be enumerated as not living with all the usual members of their family. This situation is more likely for persons who are enumerated as visitors to other private dwellings or as persons staying in non-private dwellings (hotels, hospitals, etc.). The determination of family structure and family characteristics in such cases is difficult. Thus, survey questions used to determine family relationships are restricted to persons enumerated as usual residents of private dwellings. That is, the following persons are excluded:

- all persons enumerated in non-private dwellings (including hotels, motels, hospitals and other institutions); and
- persons enumerated as visitors to (rather than usual residents of) private dwellings.

**52** In addition, in those households where it is not possible to obtain information relating to all the usual residents, no family information is recorded. Thus persons living in households which include a member of the permanent defence forces, who is outside the scope of the population survey, are excluded from survey questions used to determine family relationships because family information could not be obtained from each usual resident. Similarly, households which, at the time of the survey, have one or more of their usual residents away for more than six weeks, are excluded from the family relationship questions. This also applies to households from which an incomplete or inadequate questionnaire was obtained for any usual resident in on scope and coverage. A summary of those persons for whom family information is obtained as well as those usual residents of private dwellings for whom complete family information cannot be obtained, and those persons specifically excluded from the family determination procedures is contained in the family tables. Generally, relationship in household is determined for more than 90% of all civilians aged 15 and over.

## BIRTHPLACE

**53** From April 1991, labour force birthplace data are aggregated according to major groups of the **Standard Australian Classification of Countries (SACC)** (cat. no. 1269.0) and its predecessor. The SACC was developed by the ABS for use whenever demographic, labour and social statistics are classified by countries.

**54** The SACC major groups are based on the concept of geographic proximity. They differ from the country groups presented in this publication prior to April 1991. For example, African countries are now covered by 'The Middle East and North Africa' and 'Africa (excluding North Africa)', while Asia has been split into 'Southeast Asia', 'Northeast Asia' and 'Southern Asia'. Data for selected individual countries will continue to be available in this publication.

## INDUSTRY

**55** From August 1994, Labour Force Survey industry data are classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC), a detailed description of which appears in **ANZSIC 1993** (cat. no. 1292.0). Like the previous Australian Standard Industrial Classification (ASIC), ANZSIC classifies businesses according to their economic activities, in a structure consisting of 4 levels (Division, Subdivision, Group and Class). Labour Force Survey data are coded at the Group level, as was the practice under ASIC.

**56** To enable the conversion of historical data from ASIC to ANZSIC for the period November 1984 to May 1994, a concordance was published in the August 1994 issue of this publication and in the **Information Paper - Labour Force Survey: Introduction of ANZSIC for Industry Data (Replacement Publication)** (cat. no. 6259.0). It has been found that the concordance, which was based on preliminary investigations, did not provide the most appropriate conversion for certain Group level industries. An improved concordance has now been applied to historical Labour Force Survey estimates. This concordance was published in an appendix to the May 1996 issue of this publication, and in a further issue of the above Information Paper. For further information about the new concordance or the availability of data, contact Marjory Smith on Canberra 02 6252 6525.

## OCCUPATION

**57** From August 1996, Labour Force Survey occupation data are classified according to the Australian Standard Classification of Occupations (ASCO) Second Edition, a detailed description of which appears in **ASCO - Australian Standard Classification of Occupations, Second Edition** (cat. no. 1220.0). The new version of the classification replaces ASCO First Edition, which was adopted in the survey in August 1986. Like ASCO First Edition, ASCO Second Edition is a skill-based classification of occupation. However, the structure of ASCO Second Edition comprises five hierarchical levels (Major Group, Sub-Major Group, Minor Group, Unit Group and Occupation) compared with four levels in ASCO First Edition (Major Group, Minor Group, Unit Group and Occupation). Under ASCO Second Edition, Labour Force Survey data are coded to the Unit Group level, as was the practice under ASCO First Edition.

## ADDITIONAL DATA

**58** Some information is collected in the Labour Force Survey only four months each year in February, May, August, November. For these months, additional tables are included in this publication which present data for:

- employed persons classified by industry, occupation and status in employment;
- part-time workers' preference to work more hours; and
- the last job details of unemployed persons.

## RELATED PUBLICATIONS

**59** Users may also wish to refer to the following publications which relate to the labour force and are available on request:

**Labour Force, Australia, Preliminary** (cat. no. 6202.0) - issued monthly

**Labour Statistics: Concepts, Sources and Methods** (cat. no. 6102.0)

**Labour Force, Teenage Employment and Unemployment, Australia, Preliminary - Data Report** (cat. no. 6202.0.40.001) - issued monthly

**Labour Force, Selected Summary Tables, Australia** (cat. no. 6291.0.40.001) - issued monthly

**Labour Force, Australia, 1978 - 1995** (cat. no. 6204.0)

**Labour Force Projections, Australia: 1999 to 2016** (cat. no. 6260.0)

**Wage and Salary Earners, Public Sector, Australia** (cat. no. 6248.0) - issued quarterly

**Information Paper: Changes to Labour Force Survey Products** (cat. no. 6297.0)

**Information Paper: Questionnaires Used in the Labour Force Survey** (cat. no. 6232.0)

**Information Paper: Labour Force Survey Sample Design** (cat. no. 6269.0)

**Information Paper: Implementing the Redesigned Labour Force Survey Questionnaire** (cat. no. 6295.0)

**A Guide to Interpreting Time Series - Monitoring "Trends" An Overview** (cat. no. 1348.0)

**Labour Force Survey: Introduction of ANZSIC for Industry data** (Replacement publication) (cat. no. 6259.0)

**Directory of Labour Market and Social Survey Data (Choosing data from the ABS Household Survey Program)** (cat. no. 1135.0).

**60** ABS information about the labour market can be found on the Labour theme page on the ABS web site (Themes - People).

**61** Current publications and other products released by the ABS are listed in the **Catalogue of Publications and Products, Australia** (cat. no. 1101.0). The Catalogue is available from any ABS office or the ABS web site. The ABS also issues a daily **Release Advice** on the web site which details products to be released in the week ahead.

## DATA AVAILABLE ON REQUEST

**62** As well as statistics included in this and related publications, the ABS may have other relevant data available. Inquiries should be made to Marjory Smith on 02 6252 6525 or any ABS office.

## ROUNDING

**63** Estimates have been rounded and discrepancies may occur between sums of the component items and totals.

## SYMBOLS AND OTHER USAGES

*	subject to sampling variability too high for most practical uses. See paragraph 7 of the Technical Notes
n.a.	not available
.	not applicable
n.e.c.	not elsewhere classified
r	revised

## SUPPLEMENTARY SURVEY



## SUPPLEMENTARY SURVEYS

The Monthly Population Survey program collects data on particular aspects of the labour force. The following is an historical list of supplementary surveys to the monthly labour force surveys. The data are available in publication form, by subscription or on request. Additional data from these surveys is available and can be obtained by contacting the ABS.

Title	Catalogue number	Frequency	Latest issue
Career Experience, Australia	6254.0	Irregular	November 1998
Career Paths of Persons with Trade Qualifications, Australia	6243.0	Discontinued	Final issue 1993
Child Care, Australia	4402.0	Irregular	June 1999
Education and Work, Australia	6227.0	Annual	May 2002
Employee Earnings, Benefits and Trade Union Membership, Australia	6310.0	Annual	August 2001
Employment Benefits, Australia	6334.0.40.001	Discontinued	Final issue 1994
Forms of Employment, Australia	6359.0	Irregular	November 2001
Job Search Experience of Unemployed Persons, Australia	6222.0	Annual	July 2001
Labour Force Experience, Australia	6206.0	Biennial	February 2001
Labour Force Status and Educational Attainment, Australia	6235.0	Discontinued	Final issue 1994
Labour Force Status and Other Characteristics of Families, Australia(a)	6224.0	Discontinued	Final issue 2000
Labour Force Status and Other Characteristics of Migrants, Australia	6250.0	Irregular	November 1999
Labour Mobility, Australia	6209.0	Biennial	February 2002
Locations of Work, Australia	6275.0	Irregular	June 2000
Multiple Jobholding, Australia(b)	6216.0	Irregular	August 1997
Participation in Education, Australia	6272.0	Discontinued	Final issue 1999
Persons Not in the Labour Force, Australia	6220.0	Annual	September 2002
Persons Who had Re-entered the Labour Force, Australia	6264.0.40.001	Discontinued	Final issue 1995
Persons Who Have Left the Labour Force, Australia	6267.0.40.001	Discontinued	Final issue 1994
Retirement and Retirement Intentions, Australia	6238.0	Irregular	November 1997
Retrenchment and Redundancy, Australia	6266.0	Irregular	July 2001
Successful and Unsuccessful Job Search Experience, Australia	6245.0	Discontinued	Final issue 2000
Superannuation, Australia	6319.0	Discontinued	Final issue 1995
Trade Union Members, Australia	6325.0	Discontinued	Final issue 1996
Underemployed Workers, Australia	6265.0	Annual	September 2001
Working Arrangements, Australia	6342.0	Irregular	November 2000
Work-Related Injuries, Australia	6324.0	Irregular	September 2000

(a) Latest data available via the ABS web site, and on request, June 2002.

(b) Latest data available on request July 2001.

## FORTHCOMING SUPPLEMENTARY SURVEYS

Topic	Reference month	Release
Employee Earnings, Benefits and Trade Union Membership	August 2002	March 2003
Job Search Experience	July 2002	April 2003

## INQUIRIES

For further information on the Labour Force supplementary survey publications listed above, contact the National Information Service on 1300 135 070.

## Glossary

### Actively looking for work

Includes writing, telephoning or applying in person to an employer for work; answering an advertisement for a job; checking factory noticeboards or the touchscreens at Centrelink offices; being registered with Centrelink as a jobseeker; checking or registering with any other employment agency; advertising or tendering for work; and contacting friends or relatives.

### Aggregate hours worked

The total number of hours a group of employed persons has actually worked during the reference week, not necessarily hours paid for.

### **Attending school**

Persons aged 15-19 years enrolled at secondary or high school in the reference week.

### **Attending tertiary educational institution full time**

Persons aged 15-24 years who were enrolled full time at a TAFE college, university, or other educational institution in the reference week, except those persons aged 15-19 who were still attending school.

### **Average duration of unemployment**

For a group of unemployed persons, the aggregate duration of unemployment divided by the number of persons in the group.

### **Average family size**

For any group of families, the total number of family members divided by the number of families in the group.

### **Average hours worked**

Aggregate hours worked by a group divided by the number of persons in that group.

### **Birthplace**

From April 1991, classified according to the **Standard Australian Classification of Countries (SACC)** (cat. no. 1269.0).

### **Civilian population aged 15 years and over**

All usual residents of Australia aged 15 years and over except members of the permanent defence forces, certain diplomatic personnel of overseas governments customarily excluded from census and estimated population counts, overseas residents in Australia, and members of non-Australian defence forces (and their dependants) stationed in Australia.

### **Contributing family worker**

A person who works without pay, in an economic enterprise operated by a relative. (This category was formerly entitled unpaid family helper).

### **Couple families**

A family based on two persons who are in a registered or de-facto marriage and who are usually resident in the same household.

### **Dependent child**

Any child in a family under 15 years of age or aged 15-24 years who is a full-time student (except those who have a partner or child of their own usually resident in the household).

### **Dependent student**

A child who is 15-24 years of age and who attends a secondary school, or tertiary educational institution as a full-time student, and who has no partner or child of his or her own usually resident in the same household.

### **Duration of unemployment**

The elapsed period to the end of the reference week since a person began looking for work, or since a person last worked for two weeks or more, whichever is the shorter. Brief periods of work (of less than two weeks) since the person began looking for work are disregarded.

### **Employed**

Persons aged 15 years and over who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind, in a job or business or on a farm (comprising employees, employers and own account workers); or
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers); or
- were employees who had a job but were not at work and were:
  - away from work for less than four weeks up to the end of the reference week; or
  - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week; or
  - away from work as a standard work or shift arrangement; or
  - on strike or locked out; or
  - on workers' compensation and expected to return to their job; or
- were employers or own account workers who had a job, business or farm, but were not at work.

### **Employee**

A person who works for a public or private employer and receives remuneration in wages, salary, a retainer fee by their employer while working on a commission basis, tips, piece-rates or payment in kind, or a person who operates his or her own incorporated enterprise with or without hiring employees.

### **Employer**

A person who operates his or her own unincorporated economic enterprise or engages independently in a profession or trade, and hires one or more employees.

### **Employment/population ratio**

For any group, the number of employed persons expressed as a percentage of the civilian population aged 15 years and over in the same group.

### **Family**

Two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering; and who are usually resident in the same household. The basis of a family is formed by identifying the presence of a couple relationship, lone parent-child relationship or other blood relationship. Some households will, therefore, contain more than one family.

### **Family reference person**

In families which are not couple families or one parent families, as defined, the family reference person is the eldest person in the household (this was formerly entitled family head).

### **Former workers**

Unemployed persons who have previously worked for two weeks or more but not in the past two years.

### **Full-time workers**

Employed persons who usually worked 35 hours or more a week (in all jobs) and those who, although usually working less than 35 hours a week, worked 35 hours or more during the reference week.

### **Household**

A group of one or more persons in a private dwelling who consider themselves to be separate from other persons (if any) in the dwelling, and who make regular provision to take meals separately from other persons, i.e. at different times or in different rooms. Lodgers who receive accommodation but not meals are treated as separate households. Boarders who receive both accommodation and meals are not treated as separate households. A household may consist of any number of families and non-family members.

### **Industry**

From August 1994, classified according to the **Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993** (cat. no. 1292.0).

### **Job leavers**

Unemployed persons who have worked for two weeks or more in the past two years and **left that job voluntarily**, for example, because of unsatisfactory work arrangements/pay/hours; the job was a holiday job or they left the job to return to studies; or their last job was running their own business and they closed down or sold that business for reasons other than financial difficulties.

### **Job losers**

Unemployed persons who have worked for two weeks or more in the past two years and **left that job involuntarily**, that is, were laid off or retrenched from that job, left that job because of their own ill-health or injury, the job was seasonal or temporary; or their last job was running their own business and the business closed down because of financial difficulties.

### **Labour force**

For any group, persons who were employed or unemployed, as defined.

### **Labour force status**

A classification of the civilian population aged 15 years and over into employed, unemployed or not in the labour force, as defined. The definitions conform closely to the international standard definitions adopted by the International Conferences of Labour Statisticians.

### **Lone parent**

A person who has no spouse or partner present in the household but who forms a parent-child relationship with at least one dependent or non-dependent child usually resident in the household.

### **Lone person**

A person who makes provision for their food and other essentials for living, without combining with any other person to form part of a multi-person household. They may live in a dwelling on their own or share a dwelling with another individual or family.

### **Long-term unemployed**

Persons unemployed for a period of 52 weeks or more.

### **Main English speaking countries**

The United Kingdom, Ireland, South Africa, Canada, the United States of America and New Zealand.

### **Marital status**

A person is classified as married (husband, wife or partner) if they are living with another person of the same or opposite sex in either a registered or de facto marriage. The not married category comprises persons who live alone or with other family members, those in shared accommodation, and persons who, although reported as married, did not have a spouse or partner who usually lived in the household.

### **Median duration of unemployment**

The duration which divides unemployed persons into two equal groups, one comprising persons whose duration of unemployment is above the median, and the other, persons whose duration is below it.

### **Non-dependent child**

A child of a couple or lone parent usually resident in the household, aged over 15 years and who is not a dependent student aged 15-24 years, and who has no partner or child of their own usually resident in the household.

### **Non-family member**

A person who is not related to any other member of the household in which they are living.

### **Not in the labour force**

Persons who were not in the categories employed or unemployed as defined.

## **Occupation**

From August 1996, classified according to the **Australian Standard Classification of Occupations, Second Edition 1996** (cat. no. 1220.0). See **Information Paper: ASCO – Australian Standard Classification of Occupations** (cat. no. 1221.0).

## **One-parent family**

A family consisting of a lone parent with at least one dependent or non-dependent child (regardless of age) who is also usually resident in the household.

## **Other family**

Related individuals residing in the same household who do not form a couple or parent-child relationship with any other person in the household and are not attached to a couple or one parent family in the household. If two brothers, for example, are living together and neither is a spouse, a lone parent or a child, then they are classified as other family.

## **Own-account worker**

A person who operates his or her own unincorporated economic enterprise or engages independently in a profession or trade, and hires no employees (this category was formerly entitled self employed).

## **Participation rate**

For any group, the labour force expressed as a percentage of the civilian population aged 15 and over in the same group.

## **Part-time workers**

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

## **Seasonally adjusted series**

A time series of estimates with the estimated effects of normal seasonal variation removed. See paragraphs 36 and 37 of the Explanatory Notes for more detail.

## **State capital cities**

The areas determining the six State capital cities are the Statistical Divisions for those capital cities defined in the **Statistical Geography: Volume 1 - Australian Standard Geographical Classification (ASGC)** (cat. no. 1216.0).

## **Status in employment**

Employed persons classified by whether they were employers, own account workers, employees, or contributing family workers.

## **Trend series**

A smoothed seasonally adjusted series of estimates. See paragraphs 38 to 41 of the Explanatory Notes for more detail.

## **Unemployed**

Persons aged 15 years and over who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and:
  - were available for work in the reference week; or
  - were waiting to start a new job within four weeks from the end of the reference week, and could have started in the reference week if the job had been available then.

## **Unemployed looking for first full-time job**

Unemployed persons looking for full-time work who had never worked full time for two weeks or more.

### **Unemployed looking for first job**

Unemployed persons who had never worked for two weeks or more.

### **Unemployed looking for full-time work**

Unemployed persons who:

- actively looked for full-time work and were available for work in the reference week; or
- actively looked for work and were not available for work in the reference week because they were waiting to start a new full-time job.

### **Unemployed looking for part-time work**

Unemployed persons who:

- actively looked for part-time work only and were available for work in the reference week; or
- actively looked for work and were not available for work in the reference week because they were waiting to start a new part-time job.

### **Unemployed persons classified by industry and occupation**

Unemployed persons who had worked for two weeks or more in the last two years are classified according to the industry and occupation of their most recent job.

### **Unemployment rate**

For any group, the number of unemployed persons expressed as a percentage of the labour force in the same group.

## **Technical Note**

**1** A new sample for the Labour Force Survey has been phased in over the period November 2002 to June 2003. For information about the sample design see **Information Paper: Labour Force Survey Sample Design** (cat. no. 6269.0).

### **ESTIMATION PROCEDURE**

**2** The labour force estimates are derived from the population survey by use of a complex ratio estimation procedure, which ensures that the survey estimates conform to an independently estimated distribution of the population by age and sex, rather than to the age and sex distribution within the sample itself.

### **RELIABILITY OF THE ESTIMATES**

**3** Two types of error are possible in an estimate based on a sample survey: sampling error and non-sampling error. The **sampling error** is a measure of the variability that occurs by chance because a sample, rather than the entire population, is surveyed. Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings they, and the movements derived from them, are subject to sampling variability; that is, they may differ from the estimates that would have been produced if all dwellings had been included in the surveys. One measure of the likely difference is given by the **standard error**, which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three that the estimate that would have been obtained if all dwellings had been included will differ by less than one standard error from a sample estimate, and about nineteen chances in twenty that the difference will be less than two standard errors. Another measure of sampling variability is the **relative standard error** which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The relative standard error is a useful measure in that it provides an immediate indication of the percentage errors likely to have occurred due to sampling, and thus avoids the need to refer also to the size of the estimate.

**4** The imprecision due to sampling variability, which is measured by the standard error, should not be confused with

inaccuracies that may occur because of imperfections in reporting by respondents, errors made in collection such as in recording and coding data, and errors made in processing the data. Inaccuracies of this kind are referred to as the **non-sampling error** and they may occur in any enumeration, whether it be a full count or a sample. It is not possible to quantify non-sampling error, but every effort is made to reduce it to a minimum by careful design of questionnaires, intensive training and supervision of interviewers and efficient operating procedures. For the examples in paragraph 9 it is assumed to be zero. In practice, the potential for non-sampling error adds to the uncertainty of the estimates caused by sampling variability.

**5** Space does not allow for the separate indication of the standard errors of all estimates in this publication. Standard errors of estimates for the latest month and of estimates of movements since the previous month are shown in table 1. Standard errors of other estimates and other monthly movements should be determined by using tables A and B.

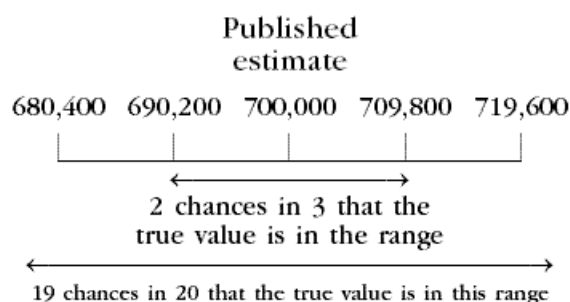
**6** The size of the standard error increases with the level of the estimate, so that the larger the estimate the larger is the standard error. However, it should be noted that the larger the sample estimate the smaller will be the standard error in percentage terms. Thus, larger sample estimates will be relatively more reliable than smaller estimates.

**7** As the standard errors in table A show, **the smaller the estimate the higher is the relative standard error**. Very small estimates are subject to such high standard errors (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. In the tables in this publication, only estimates with relative standard errors of 25% or less, and percentages based on such estimates, are considered sufficiently reliable for most purposes. However, estimates and percentages with larger relative standard errors have been included and are preceded by an asterisk (e.g. \*3.4) to indicate they are subject to high standard errors and should be used with caution.

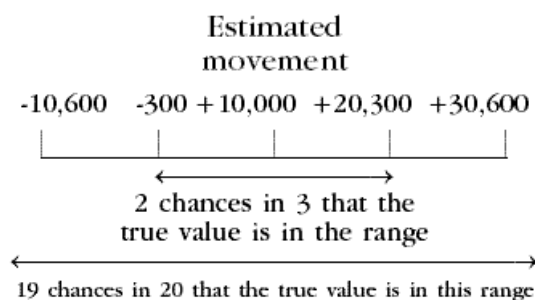
**8** The movement in the level of an estimate is also subject to sampling variability. The standard error of the movement depends on the levels of the estimates from which the movement is obtained rather than the size of the movement. An indication of the magnitude of standard errors of monthly movements is given in table B. The estimates of standard error of monthly movements apply only to estimates of movements between two consecutive months. Movements between corresponding months of consecutive quarters (quarterly movements), corresponding months of consecutive years (annual movements) and other non-consecutive months, will generally be subject to somewhat greater sampling variability than is indicated in table B. Standard errors of **quarterly** movements can be obtained by multiplying the figures in table A by 1.04. Standard errors of all **six monthly** movements can be obtained by multiplying the figures in table A by 1.28. When using table A or table B to calculate standard errors of movements, refer to the larger of the two estimates from which the movement is derived.

**9** Examples of the calculation and use of standard errors are given below:

- Consider an estimate for Australia of 700,000 employed persons aged 15–19 years. By referring to table A, for an estimate of 700,000 and the column for Australia, a standard error of 9,800 is obtained (after applying linear interpolation and rounding). There are about two chances in three that the true value (the number that would have been obtained if the whole population had been included in the survey) is within the range 690,200 to 709,800. There are about nineteen chances in twenty that the true value is in the range 680,400 to 719,600.



- Consider estimates for females employed part time in Australia of 1,890,000 in one month and 1,900,000 in the next month. This represents an upward movement of 10,000. By referring to table B for the larger estimate of 1,900,000, a movement standard error of 10,300 is obtained (after applying linear interpolation and rounding). Therefore, there are about two chances in three that the true movement is in the range -300 to +20,300 and about nineteen chances in twenty that the true movement is in the range -10,600 to +30,600.



**10** The relative standard errors of estimates of **aggregate hours worked**, **average hours worked**, **average duration of unemployment**, and **median duration of unemployment** are obtained by first finding the relative standard error of the estimate of the total number of persons contributing to the estimate (see table A) and then multiplying the figure so obtained by the following relevant factors:

- aggregate hours worked: 1.4;
- average hours worked: 0.9;
- average duration of unemployment: 1.5; and
- median duration of unemployment: 1.7.

The levels at which these and other labour force estimates have a relative standard error of 25% are shown in table C.

**11** The following is an example of the calculation of standard errors where the use of a factor is required:

- Consider a median duration of unemployment for Australia of 30 weeks, with an estimate of 1,000,000 persons unemployed. Table A gives the standard error as 11,350 which is 1.1% as a **relative standard error**. The factor of 1.7 (see paragraph 10) is applied to the relative standard error of 1.1% to obtain 1.9%. Therefore the **standard error** for the median duration of unemployment is 1.9% of 30 weeks, i.e. about half of one week. So there are two chances in three that the median duration of unemployment is between 29.5 and 30.5 weeks, and about nineteen chances in twenty that it is between 29 and 31 weeks.

**12** Proportions and percentages (for example, unemployment rates) formed from the ratio of two estimates are also subject to sampling error. The size of the error depends on the accuracy of both the numerator and denominator. The formula for the relative standard error (RSE) of a proportion or percentage is given below:

$$RSE (x / y) = \sqrt{[RSE (x)]^2 + [RSE (y)]^2}$$

**13** Standard errors contained in tables A and B are designed to provide an average standard error applicable for all monthly Labour Force Survey estimates. Analysis of the standard errors applicable to particular survey estimates has shown that the standard errors of estimates of employment are generally 5% lower than those shown in tables A and B, while standard errors for estimates of unemployment and persons not in the labour force are both approximately 4% higher than those shown in the tables.

#### A. STANDARD ERRORS OF ESTIMATES FROM SEPTEMBER 1997(a)

Size of estimate	NSW no.	Vic. no.	Qld no.	SA no.	WA no.	Tas. no.	NT no.	ACT no.	Aust. no.	%
100						100	100	130		
200				210	210	140	130	160	140	70.0
300	220	230	310	250	260	160	150	180	180	60.0
500	320	320	390	310	330	200	190	210	270	54.0
700	400	390	460	360	380	230	220	240	340	48.6
1,000	520	490	540	410	450	270	250	270	440	44.0
1,500	670	620	650	490	540	320	290	310	570	38.0
2,000	800	740	740	550	610	360	330	340	700	35.0
2,500	900	850	800	600	650	400	350	350	800	32.0
3,000	1,000	900	900	650	700	400	400	400	900	30.0
3,500	1,100	1,000	950	700	750	450	400	400	950	27.1



4,000	1,200	1,050	1,000	750	800	450	450	450	1,050	26.3
5,000	1,350	1,200	1,100	800	900	500	450	500	1,200	24.0
7,000	1,600	1,400	1,300	900	1,050	600	550	550	1,450	20.7
10,000	1,900	1,650	1,500	1,050	1,200	700	600	600	1,700	17.0
15,000	2,300	1,950	1,800	1,250	1,400	800	700	750	2,100	14.0
20,000	2,600	2,200	2,050	1,400	1,550	900	800	800	2,450	12.3
30,000	3,100	2,600	2,400	1,650	1,850	1,050	900	950	2,950	9.8
40,000	3,450	2,900	2,750	1,850	2,050	1,150	1,000	1,100	3,300	8.3
50,000	3,700	3,100	3,000	2,050	2,200	1,250	1,100	1,200	3,650	7.3
100,000	4,600	3,900	4,000	2,700	2,850	1,600	1,400	1,650	4,750	4.8
150,000	5,250	4,550	4,700	3,200	3,300	1,900	1,600	1,950	5,500	3.7
200,000	5,750	5,100	5,300	3,550	3,650	2,100	1,800	2,250	6,150	3.1
300,000	6,700	6,050	6,250	4,200	4,150	2,450		2,700	7,150	2.4
500,000	8,350	7,550	7,650	5,100	4,950	2,900			8,700	1.7
1,000,000	11,650	10,600	10,000	6,700	6,150				11,350	1.1
2,000,000	17,150	15,400	13,050	8,750	7,600				15,000	0.8
5,000,000	30,750	26,500	18,400						23,000	0.5
10,000,000									40,350	0.4

(a) For standard errors for earlier period, see previous issues of this publication.

#### B. STANDARD ERRORS OF ESTIMATES OF MONTHLY MOVEMENTS FOR DECEMBER 2002 TO JANUARY 2003 ONWARDS (a)

Size of larger estimate	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
100						100	90	100	310
200			330	210	270	130	110	130	400
300	490	400	380	240	300	150	130	140	460
500	580	480	450	280	360	180	160	170	550
700	650	530	500	320	400	200	180	190	630
1,000	730	600	570	360	450	220	210	210	710
1,500	840	690	660	420	520	260	240	240	820
2,000	920	760	730	460	570	280	270	270	910
2,500	1,000	820	780	500	610	310	300	290	980
3,000	1,060	880	840	530	650	330	320	310	1,050
4,000	1,170	970	920	590	720	360	360	340	1,160
5,000	1,260	1,040	1,000	630	770	390	390	360	1,260
7,000	1,410	1,170	1,120	710	860	440	440	400	1,420
10,000	1,590	1,320	1,270	810	970	500	500	450	1,610
15,000	1,820	1,520	1,460	930	1,110	570	590	520	1,860
20,000	2,010	1,670	1,610	1,030	1,220	630	660	570	2,060
30,000	2,300	1,920	1,860	1,190	1,390	730	770	650	2,380
50,000	2,740	2,290	2,220	1,420	1,650	870	930	760	2,850
70,000	3,060	2,560	2,490	1,600	1,840	980	1,060	850	3,210
100,000	3,460	2,890	2,820	1,810	2,070	1,100	1,210	960	3,650
150,000	3,960	3,320	3,240	2,080	2,360	1,270	1,410	1,090	4,210
200,000	4,370	3,670	3,580	2,300	2,600	1,400	1,580	1,200	4,670
300,000	5,000	4,210	4,120	2,660	2,970	1,610		1,370	5,390
500,000	5,950	5,010	4,920	3,180	3,520	1,930			6,470
1,000,000	7,510	6,340	6,260	4,050	4,420				8,270
2,000,000	9,490	8,030	7,960	5,160	5,550				10,580
5,000,000	12,920	10,970	10,930						14,660
10,000,000									18,750

(a) For standard errors for earlier periods, see previous issues of this publication.

#### C. LEVELS AT WHICH LABOUR FORCE ESTIMATES HAVE A RELATIVE STANDARD ERROR OF 25%(a) FROM SEPTEMBER 1997(b)

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
Estimates (c) of									
Aggregate hours worked	10,600	8,200	7,200	4,000	4,800	1,800	1,500	1,800	8,700
Average hours worked	4,600	3,800	3,700	2,000	2,400	800	700	1,000	3,500
Average duration of unemployment	10,400	9,600	7,300	4,100	5,000	1,800	1,100	1,900	10,400
Median duration of unemployment	16,800	12,700	10,800	6,000	7,200	2,800	2,500	2,600	14,300
All other estimates	5,900	4,500	4,100	2,400	2,800	1,100	1,000	1,100	4,400

(a) See Technical Notes, paragraph 10-11.

(b) For standard errors for earlier periods, see previous issues of this publication.

(c) The entries in this table refer to the number of persons contributing to the estimate.

